



# ENERGY POLICY UPDATE

August 19, 2014

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- ✚ U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

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The Arizona Republic now has limited access. As such, links may or may not work.

## ARIZONA-RELATED

### [It's War: Arizona's Strengths Against Other Contenders for Tesla's \\$5B Gigafactory](#)

Arizona, New Mexico, California, Nevada and Texas are vying for the massive [Tesla](#) Motors Inc. [Phoenix Business Journal, Aug. 12] battery factory that could create 6,500 jobs. Several sites across metro Phoenix have been mentioned as possible landing spots for the project. The city of Tucson also has been aggressive in its pursuit, even sending a building permit to Tesla CEO [Elon Musk](#). *Wall Street Daily* says Musk has several factors to consider in his decision: tax breaks and incentives, regulatory landscape, land, natural resources, cost and a state's existing relationship with Tesla.

### [Phoenix Mayor Stanton Wants To Triple Light-Rail Route](#)

*Voters would decide on Stanton's ambitious goal of tripling tracks.*

[Arizona Republic, Aug. 12] Phoenix leaders on Tuesday announced they have formed a citizen committee to draft light-rail expansions and street and bus improvements. Officials said voters will likely see those plans on next year's ballot for funding approval. The committee will help determine in the coming months what that plan will look like and how much it will cost, but one goal is clear: Mayor Greg Stanton aims to triple the Metro light rail's mileage. Mary Peters, a former U.S. secretary of transportation, will lead the committee, comprising former council members, business leaders and other residents, but the city also will look for resident input through [talktransportation.org](http://talktransportation.org). The new website asks visitors to describe their vision for transportation over the next 20 to 30 years, requests feedback for needed bus service and hosts updates about transportation news. Light rail covers 20 miles and runs through Phoenix, Tempe and Mesa, stopping at 28 stations. The rail opened in 2008 and cost \$1.4 billion to build. Additional extensions are underway in Phoenix and Mesa. Light rail has reached its 2020 ridership goal of 48,000 people a day, roughly 22,000 more than expected during the system's fifth year. Proponents say the rail has generated about \$7 billion in economic investment.

### [Pinnacle Subsidiary Will Bid On Power-Line Contracts](#)

[Arizona Republic, Aug. 18] Pinnacle West Capital Corp., the parent company of Arizona Public Service Co., is forming a new subsidiary that will attempt to land big power-line deals and potentially other business. Pinnacle West announced the formation of Bright Canyon Energy during its quarterly conference call July 31. The first project the subsidiary hopes to land is the Delaney-Colorado River 500-kilovolt transmission line recently approved by California regulators. For this project, estimated to cost about \$338 million, Bright Canyon has formed a joint-venture with MidAmerican Transmission, a subsidiary of energy companies owned by Warren Buffett's

Berkshire Hathaway. The joint venture, called TransCanyon, will submit a bid on the project this month. The winning bid should be known next year. The line is expected to take three years to permit and two to build. The new venture won't affect APS utility customers, though it could generate new lines of revenue for the parent company, said Jason Smith, Pinnacle West director of corporate development. The DCR transmission line will run from near the Palo Verde Nuclear Generating Station west of Phoenix and travel northwest 130 miles to a spot over the state line 18 miles into California.

#### [TEP Seeks OK To Put Company-Owned Solar on Customer Roofs](#)

[Arizona Daily Star, Aug. 16] Tucson Electric Power Co.'s next big solar-energy farm may be spread over hundreds of rooftops across the Old Pueblo. In a move that rankles some in the solar-energy industry, TEP has asked the Arizona Corporation Commission to approve a new program to install company-owned photovoltaic systems on residential customers' roofs, free of upfront charges. In exchange, customers would pay a fixed monthly electric rate based on historical usage — estimated at \$99 a month for a typical customer who now spends \$90 to \$100 a month on power — and guaranteed for 25 years. TEP would own the systems and use local contractors to build and maintain them. The company is seeking approval to spend \$10 million to fund 3.5 megawatts' worth of rooftop systems, or about 600 homes with the systems rated at 6 kilowatts each. The program would be available to all TEP customers but would be marketed in areas deemed by TEP to be best-suited for grid-connected solar, a company spokesman said. The proposal is part of TEP's 2015 plan to comply with Arizona's renewable-energy standard, which requires state-regulated utilities to boost their share of renewable generation to 15 percent of their retail power sales by 2025. The biggest state-regulated utility, Arizona Public Service Co., has proposed a somewhat similar program to install utility-owned solar systems on customer rooftops in exchange for monthly bill credits of \$30 a month. While TEP and other state-regulated utilities own many of the large-scale solar farms developed in recent years, TEP's recent proposal marks the first time the company has sought to use home rooftops to host its own solar arrays. TEP's proposal will allow more customers to participate in solar — including those who can't afford to buy their own systems or lack the credit to finance or lease systems — while avoiding shifting costs to other customers, said David Hutchens, president and CEO of TEP and its parent, UNS Energy Corp.

#### [The Battle Is On for Tesla's New Gigafactory](#)

[Wall Street Journal, Aug. 11] Almost 150 years have passed since the American Civil War ended... but a new battle is brewing between a handful of U.S. states. Rather than a North versus South clash, though, this war is being waged between the West and the Southwest. And instead of muskets, these combatants are fighting with today's ultimate weapon — money. It's a battle that will profoundly change the face of an entire industry — and the fortunes of one company in particular. Five states are duking it out — and they're each dead set on winning this lucrative reward. Giga-What? Giga-Who? The ultimate prize for winning this war is Elon Musk and his electric car company, Tesla Motors ([TSLA](#)<sup>[1]</sup>). More specifically, the battle will decide which state will win the right to house Tesla's brand-new battery gigafactory — a \$5-billion, purpose-built facility to build lithium-ion batteries for Tesla cars. The reason for building this factory is two-fold: cost reduction and mass production. Tesla's design calls for a 10-million-square-foot lithium-ion battery plant, which would require roughly 500 to 1,000 acres of land. That would easily make it the world's largest battery plant. The problem is, lithium-ion batteries aren't cheap. In fact, they're the most expensive components inside electric vehicles. And given that these batteries are the heart and soul of Tesla's business, Musk wants to cut costs through in-house mass production. The equation is simple for Tesla: Bring down battery manufacturing costs and the cars will be cheaper. And that's crucial when it comes to getting more consumers to adopt electric cars. In fact, Musk believes he can reduce the per kilowatt hour (KWh) expenditure by 30% as soon as 2017 — just in time for the launch of Tesla's critical third-generation sedan — the Model 3. And the price is pegged to be roughly \$35,000 cheaper than the current Model S series. So where will Tesla build its gigafactory?

### **ALTERNATIVE ENERGY & EFFICIENCY**

#### [DOE Promotes Wind Power in Reports](#)

[The Hill, Aug. 18] The Department of Energy (DOE) is trying to promote wind power as an innovative, low-carbon energy source with a series of reports released Monday. The reports, written by DOE and some of its laboratories, found that the United States ranks second to China in wind energy installation and wind power provides 4.5 percent of the country's electricity, among other conclusions. "As a readily expandable, domestic source of clean, renewable energy, wind power is paving the way to a low-carbon future that protects our air and water while providing affordable, renewable electricity to American families and businesses," Energy Secretary Ernest

Moniz said in a statement. DOE used the reports to advocate for reinstatement of the wind energy tax credit, a tax break for wind energy production that expired last year. "The continued success of the U.S. wind industry highlights the importance of policies like the production tax credit that provide a solid framework for America to lead the world in clean energy innovation while also keeping wind manufacturing and jobs in the U.S.," Moniz said. A Senate panel voted earlier this year to renew the credit, but the proposal did not move forward. The tax break has proven extremely controversial in Congress. DOE released two reports Monday. One focuses on the market for wind energy technology and the other is about distributed wind energy, which is installed at homes, businesses or other sites that are not utility-scale generation facilities.

#### [DOE To Fund \\$55 Million in Vehicle Efficiency, Electric Vehicle Projects](#)

[The Hill, Aug. 14] The Obama administration announced Thursday that it will give \$55 million to 31 projects that aim to improve electric vehicle technology and increase fuel efficiency for other vehicles. Nineteen of the projects funded by the Department of Energy (DOE) are part of the Obama administration's efforts to reduce plug-in electric vehicle prices to the level of combustion vehicles by 2022. "Investments in the next generation of vehicle technologies will both strengthen our economy and lead to a more fuel efficient, clean energy future," Energy Secretary Ernest Moniz said in a statement. "Improving vehicle efficiency is instrumental to establishing a 21st century transportation sector that creates jobs as well as protects future generations from harmful carbon emissions." Specifically, the electric vehicle projects aim to develop battery technologies other than lithium ion, the dominant technology currently used for cars. Grant recipients will also try to make vehicle components lighter and reduce drivetrain friction.

#### [Ice-Based Energy Storage Saves Florida School District \\$5M per Year](#)

[Energy Manager Today, Aug. 8] The St. Lucie School District's (SLCSD) in Florida is using ice-enhanced cooling as part of its energy cost reduction strategy. Over the past seven years, the district has installed CALMAC's IceBank energy storage tanks in 15 schools. The school district's energy management program has created a 30-40 percent reduction in annual energy costs, totaling about \$5 million. Before implementing CALMAC's thermal energy storage and other energy efficiency upgrades, SLCSD was ranked number 60 out of 67 county school districts in terms of energy costs per square foot within the state. Now, the district ranks among the top 20 and recently received the "Energy Efficiency Leader Award" from Trane. Two different utilities, with different rates structures, currently supply SLCSD with energy. This led to the use of partial and full energy storage systems among the different schools in the district. Centennial High School installed a full energy storage system to take advantage of incentives that cover most of the cost of installation. Enough cooling is stored in the form of ice during the night to cool the campus from noon-9 p.m. without assistance from the chiller. As a result, the school has seen a 50 percent reduction in cooling costs, saving \$300,000 per year.

#### [Solar Boom Driving First Global Panel Shortage Since 2006](#)

[Bloomberg, Aug. 18] The solar industry is facing a looming shortage of photovoltaic panels, reversing a two-year slump triggered by a global glut. The oversupply pushed prices through the floor, making solar power more competitive and driving up demand. It also dragged dozens of manufacturers into bankruptcy, and slowed capital investment at the survivors. With installations expected to swell as much as 29 percent this year, executives are bracing for the first shortfall since 2006. Scarcity will benefit the biggest manufacturers, including China's Yingli Green Energy Holdings Co. (YGE) and Trina Solar Ltd. (TSL) A shortage may slow development outside the top markets in Asia and North America if suppliers favor their largest customers. Shipments to large, utility-scale solar farms may get priority over smaller, rooftop systems, threatening one of the industry's fastest-growing markets. "The cell and module glut has certainly dried up," said Stefan de Haan, a solar analyst at IHS Inc. "There is no massive overcapacity anymore."

#### [Three-Wheeled Elio Gets Closer To Going on Sale](#)

[Associated Press, Aug. 15] ROYAL OAK, Mich. (AP) — Your next commuter car could have two seats, three wheels and get 84 miles to the gallon. Elio Motors wants to revolutionize U.S. roads with its tiny car, which is the same length as a Honda Fit but half the weight. With a starting price of \$6,800, it's also less than half the cost. Phoenix-based Elio plans to start making the cars next fall at a former General Motors plant in Shreveport, Louisiana. Already, more than 27,000 people have reserved one. Elio hopes to make 250,000 cars a year by 2016. That's close to the number Mazda sells in the U.S. Because it has three wheels — two in front and one in the rear — the Elio is actually classified as a motorcycle by the U.S. government. But Elio Motors founder Paul Elio says the vehicle has all the safety features of a car, like anti-lock brakes, front and side air bags and a steel cage that surrounds the occupants. Drivers won't be required to wear helmets or have motorcycle licenses. The Elio's two seats sit front and back instead of side by side, so the driver is

positioned in the center with the passenger directly behind. That arrangement, plus the low seating position — the Elio is just 54 inches tall — and the lack of power steering take a little getting used to. But after a couple of spins around the block in this Detroit suburb, it felt like any other small car. That's partly because its two front wheels stick out by a foot on both sides, aiding balance and preventing the vehicle from tipping. The Elio has a three-cylinder, 0.9-liter engine and a top speed of more than 100 miles per hour. It gets an estimated 84 mpg on the highway and 49 mpg in city driving.

#### [U.S. Solar Carport Market 2014-2018: Landscape, Outlook and Leading Companies](#)

[Green Tech Media, Aug. 14] The solar carport market has become an increasingly substantial sector within the non-residential solar market and the United States solar industry as a whole, growing to 157 MW in 2013. 2014 is expected to be the fourth consecutive year during which greater than 100 MW of solar carport installations were installed. Historically seen as a niche market, recent growth is attributed to falling system prices as well as a shift in the value proposition of solar carports themselves towards educational, government, and non-profit customers aiming for targeted savings on electricity bills. Developers have used this tactic and have exploited state-level incentives to grow the market at a CAGR of 45% from 2010 to 2014. GTM forecasts that the market will continue to grow year over year until the drop off in the federal investment tax credit in 2017. Growth in the market and low perceived barriers to entry have made the market increasingly crowded, and this report provides a clear picture into the current landscape of the industry and expectations for where it is headed.

### **ENERGY/GENERAL**

#### [Mexico Dreams Face Test After Opening to Investors](#)

[Associated Press, Aug. 7] MEXICO CITY — Mexico has passed laws to open its oil, gas and electric industries to private and foreign investors after 76 years of state control. Now comes the hard part. Experts say Mexico's hopes for tens of billions of dollars in outside investment, and possibly a shale gas boom like the one occurring across the border in Texas, hinge on being able to design the kind of tenders, contracts and concessions that would actually prove attractive to companies that already have their hands full drilling in deep sea waters and hydro-fracking elsewhere. On that question hinges Mexico's hope for an industrial boom. Mexico says it is stepping into new era following the approval of the final bills late Wednesday. The country has been pinning its hopes on becoming a low-wage manufacturing center, but growth has been limited by unusually high electricity rates and the need to import massive quantities of natural gas at high prices. Mexico's oil and gas production peaked in 2004 at 3.4 million barrels a day. It has fallen steadily since to the current 2.5 million barrels. With the reform, the government hopes to increase that to 3 million barrels by 2018 and 3.5 million by 2025, by attracting private companies with the expertise and technology to exploit the country's vast shale and deep-water reserves. The first contracts and concessions for drilling blocks are expected in 2015, and the government hopes to draw more than \$10 to \$15 billion in private investment in the industry per year. But those hopes are running up against hard realities: the Mexican government and the state-owned oil company have little experience at putting out attractive contracts for bid, or at managing them with clarity and transparency.

#### [Renouncing Partnership Structure, Pipeline Group Kinder Morgan To Reorganize as Single Corporation](#)

[New York Times, Aug. 10] In recent years, master limited partnerships have become an increasingly popular — and lucrative — structure for oil and gas companies. They pay no corporate taxes and distribute all profits to shareholders, making them a hit with investors. But on Sunday, the biggest M.L.P. of them all announced it was disbanding the unique structure and reorganizing into a traditional corporation. [Kinder Morgan](#), which encompasses a huge network of oil and gas pipelines across North America, will acquire its three associated companies and reorganize as one corporation based in Houston. The new Kinder Morgan will have an estimated enterprise value of about \$140 billion — \$100 billion of market value and \$40 billion of debt — making it the third-largest energy company in the United States, after Exxon and [Chevron](#).

#### [Study: Oil Companies Fracking into Drinking Water Sources](#)

[Tribune Washington Bureau, Aug. 12] WASHINGTON — Some companies are fracking for oil and gas at far shallower depths than widely believed, sometimes through underground sources of drinking water, according to research released Tuesday by Stanford University scientists. Though researchers cautioned their study of hydraulic fracturing, or fracking, employed at two Wyoming geological formations showed no direct evidence of water-supply contamination, their work is certain to roil the public health debate over the risks of the controversial oil and gas production

process. Fracking involves high-pressure injection of millions of gallons of water mixed with sand and chemicals to crack geological formations and tap previously unreachable oil and gas reserves. Fracking fluids contain a host of chemicals, including known carcinogens and neurotoxins. Fears about possible water contamination and air pollution have fed resistance in communities around the country, threatening to slow the oil and gas boom made possible by fracking. Fracking into underground drinking water sources is not prohibited by the 2005 Energy Policy Act, which exempted the practice from key provisions of the Safe Drinking Water Act. But the industry has long held that it does not hydraulically fracture into underground sources of drinking water because oil and gas deposits sit far deeper than aquifers. The study, however, found that energy companies used acid stimulation, a production method, and hydraulic fracturing in the Wind River and Fort Union geological formations that make up the Pavillion gas field and that contain both natural gas and sources of drinking water.

#### [Traders Profit as Power Grid is Overworked](#)

[New York Times, Aug. 15] Port Jefferson, N.Y. — By 10 a.m. the heat was closing in on the North Shore of Long Island. But 300 miles down the seaboard, at an obscure investment company near Washington, the forecast pointed to something else: profit. As the temperatures climbed toward the 90s here and air-conditioners turned on, the electric grid struggled to meet the demand. By midafternoon, the wholesale price of electricity had jumped nearly 550 percent. What no one here knew that day, May 30, 2013, was that the investment company, DC Energy, was reaping rewards from the swelter. Within 48 hours the firm, based in Vienna, Va., had made more than \$1.5 million by cashing in on so-called congestion contracts, complex financial instruments that gain value when the grid becomes overburdened, according to an analysis of trading data by The New York Times. Those profits are a small fraction of the fortune that traders at DC Energy and elsewhere have pocketed because of maneuvers involving the nation's congested grid. Over the last decade, DC Energy has made about \$180 million in New York State alone, The Times found. Across the nation, investment funds and major banks are wagering billions on similar trades using computer algorithms and teams of Ph.D.s, as they chase profits in an arcane arena that rarely attracts attention. Congestion occurs when demand for electricity outstrips the immediate supply, sending prices higher as the grid strains to deliver power from distant and often more expensive locations to meet the demand. To help power companies and others offset the higher costs, regional grid operators, which manage the nation's transmission lines and wholesale power markets, auction off congestion contracts, derivatives linked to thousands of locations on the grid. When electricity prices spike, contract holders collect the difference in prices between points from the grid operators. If the congestion moves in the opposite direction, holders pay the operators. The contracts were intended to protect the electricity producers, utilities and industries that need to buy power. The thinking was that the contracts would help them hedge against sharp price swings caused by competition as well as the weather, plant failures or equipment problems. Those lower costs could reduce consumers' bills. But Wall Street banks and other investors have stepped in, siphoning off much of the money. In New York, DC Energy accounted for more than a quarter of the total \$639 million in profits in the congestion markets between 2003 and 2013, The Times found. Some of DC Energy's biggest paydays involved Port Jefferson, a village 60 miles east of Manhattan. Because of the geography of the grid, moving power from one point to another means demand often briefly outstrips supply here. "Why aren't we getting that money?" said Margot Garant, mayor of Port Jefferson. City officials, including the mayor, had not heard of DC Energy before they were told about it by The Times. DC Energy — and its profits — are an unexpected result of the deregulation of the nation's electric grid. The idea behind deregulation was to eliminate old monopolies and create robust, competitive markets that would encourage investment and ultimately lower costs for consumers. But in most places, electricity bills have been rising, not falling. While fuel prices, taxes and fees have added directly to the costs, Wall Street-style traders have contributed in subtle ways by turning new markets, like the trading of congestion contracts, to their advantage, The Times analysis found.

#### [World Awash in Oil Shields Markets from 2008 Price Shock](#)

[Bloomberg, Aug. 13] Fighting across Iraq, Libya, Ukraine and Gaza, and an accelerating economy, should mean higher oil prices. Yet crude is falling. Six years ago, oil soared to a record \$147 a barrel as tension mounted over Iran's nuclear program and the world economy had just seen the strongest period of sustained growth since the 1970s. Now, West Texas Intermediate, the U.S. benchmark price, has traded below \$100 for 10 days and Brent, the European equivalent, tumbled to a 13-month low. What's changed is the shale fracking boom. The U.S. is pumping the most oil in 27 years, adding more than 3 million barrels of daily supply since 2008. The International Energy Agency said yesterday that a supply glut is shielding the market from disruptions. Bank of America Corp., Citigroup Inc. and BNP Paribas SA concur. "North America has pushed out an incredible amount of crude oil that it used to import," **Ed Morse**, the head of

commodities research at Citigroup, said in a phone interview from New York yesterday. “The world doesn’t need that much.” The U.S. imported 7.17 million barrels a day of crude in May, a 26 percent drop from the same month in 2008, according to data compiled by the Energy Information Administration, the Energy Department’s statistical arm. Foreign deliveries will meet 22 percent of U.S. demand next year, the lowest level since 1970, the agency said yesterday.

## INDUSTRIES AND TECHNOLOGIES

### [Longer-Lasting Battery Is Being Tested for Wearable Devices](#)

*Applied Materials has started shipping equipment that could help double the energy storage of batteries.*

[MIT Tech Review, Aug. 14] A type of battery that could eventually store twice as much energy as a conventional one could be about to move beyond niche applications to wearable devices, phones, and even electric cars. Solid-state batteries, as they’re called, have been available for a while and are used in some wireless sensors, but they have been too expensive to use elsewhere. Applied Materials, one of the world’s biggest equipment suppliers for the semiconductor and display industries, says it can make these batteries much cheaper. This could clear the way for slimmer, longer-lasting smart watches as well as electric cars with a range similar to gas-powered ones. In solid-state batteries the liquid electrolytes normally used in conventional lithium-ion batteries are replaced with solid ones, which makes it possible to replace conventional electrodes with lithium metal ones that hold far more energy. Doing away with the liquid electrolyte, which is flammable, can also improve the safety of batteries, which leads to cost and size savings, particularly in electric vehicles, by reducing the need for complex cooling systems (see “[TR10: Solid-State Batteries](#)”). The manufacturing tools shipped so far by Applied Materials, which perform extremely high-precision deposition of materials over large areas, will be used initially for prototyping and demonstrations of solid-state batteries.

### [Recycling Old Batteries into Solar Cells](#)

*Proposal could divert a dangerous waste stream while producing low-cost photovoltaics.*

[MIT Tech Review, Aug. 18] This could be a classic win-win solution: A system proposed by researchers at MIT recycles materials from discarded car batteries — a potential source of lead pollution — into new, long-lasting solar panels that provide emissions-free power. The system is described in a paper in the journal *Energy and Environmental Science*, co-authored by professors Angela M. Belcher and Paula T. Hammond, graduate student Po-Yen Chen, and three others. It is based on a recent development in solar cells that makes use of a compound called perovskite — specifically, organolead halide perovskite — a technology that has rapidly progressed from initial experiments to a point where its efficiency is nearly competitive with that of other types of solar cells. “It went from initial demonstrations to good efficiency in less than two years,” says Belcher, the W.M. Keck Professor of Energy at MIT. Already, perovskite-based photovoltaic cells have achieved power-conversion efficiency of more than 19 percent, which is close to that of many commercial silicon-based solar cells. Initial descriptions of the perovskite technology identified its use of lead, whose production from raw ores can produce toxic residues, as a drawback. But by using recycled lead from old car batteries, the manufacturing process can instead be used to divert toxic material from landfills and reuse it in photovoltaic panels that could go on producing power for decades.

## LEGISLATION AND REGULATION

### [13 State Air Regulators Hold Meeting on New Carbon Emission Standards and Regulations](#)

[NASEO, Aug. 12] Top air regulators from 13 states across the western U.S. met recently to discuss how they could work together on carbon-emissions cuts and meeting new benchmarks. California Air Resources Board chairman Mary Nichols, Nevada Environmental Protection administrator Colleen Cripps and Arizona Department of Environmental Quality director Henry Darwin attended the July 17 meeting in Denver, spokesmen for their agencies said. The closed discussion was organized by Colorado State University’s Center for the New Energy Economy, led by former Colorado Governor Bill Ritter. The U.S. Environmental Protection Agency’s proposal to cut carbon-dioxide pollutants from power plants 30 percent from 2005 levels by 2030 includes an incentive for states to develop regional carbon-trading systems. States that combine efforts can get an extra year, until 2018, to comply.

### [Natural Gas Execs Fear They’re Next for Regs](#)

[The Hill, Aug. 17] Natural gas producers are keeping quiet about the controversial power plant rules from President Obama, fearing they could become the next target of federal regulators. At least in the short term, a government-forced shift away from coal power would be a boon for the

natural gas industry, which is already experiencing a renaissance thanks to advances in the drilling technique of fracking. The Obama administration **has predicted** natural gas would gobble up 32 percent of the electricity market by 2030 under the regulations — enough to eclipse coal as the nation's top power source. But business groups up and down the natural gas supply chain are wary of what comes next as the administration strengthens regulations on greenhouse gas emitters to combat climate change. Randy Albert, a former executive for Consol Energy Inc.'s natural gas business, said charges from Republicans and some coal-state Democrats that the Obama administration is fighting a "war on coal" are not far off. "I think it's more than a war on coal, it's a war on carbon," said Albert, who now consults for the natural gas industry. "I think when they're done with coal, they'll go after gas." Publicly, the natural gas industry has given a tempered response to Obama's plan to slash greenhouse gas emissions from power plants by 30 percent. In private, business groups representing natural gas are operating with "guarded excitement" about the prospects of increased demand, according to one source with knowledge of their thinking. "There's a delicate dance going on," he said, adding that support for more stringent rules is a wholly foreign concept for a segment of the economy that is accustomed to pushing back on government rules. "At some point they're going to turn their crosshairs on the natural gas industry," he said. Some business groups see the power plant rule as a prelude to crackdowns on refineries, iron and steel, the paper and pulp industry — and natural gas.

#### [Top Federal Officials Discuss Energy Development](#)

[Associated Press, Aug. 11] Santa Fe, NM – The potential for renewable energy development in the Southwest is tremendous, but two top officials in President Barack Obama's administration said Monday much work needs to be done to meet the challenges of exporting that power to market. Interior Secretary Sally Jewell and Energy Secretary Ernest Moniz were among dozens of state and tribal officials who met in Santa Fe as part of the administration's effort to develop recommendations regarding the transmission, storage and distribution of energy. Jewell and Moniz said one of the biggest challenges has been working across state lines and Native American jurisdictions to site and permit transmission and pipeline projects. They pointed to the \$2 billion SunZia project between New Mexico and Arizona as one example. The proposed transmission line was stalled for months until the Department of Defense offered a compromise this spring that eased concerns about the project's effects on operations at a missile range in southern New Mexico. Jewell said the U.S. needs a comprehensive plan for energy development. Instead of seeing individual processes, a strategic focus is needed that considers the expansion of oil and gas with renewable energy and the planning of transmission lines and pipelines all at the same time. "Each of us has a role to play and how do we knit those things together so that we can cooperate and have an energy future that is more sensible, less complicated and less bureaucratic than it's been," she said. "Certainly, we have a long way to go to make that happen." More than a dozen meetings are being held around the country as part of the administration's energy review. A report focused on infrastructure challenges is expected in January.

#### [U.S. Court Upholds FERC Rules on Electric Grid Planning](#)

[Reuters, Aug. 15] WASHINGTON – A U.S. court on Friday upheld rules from the Federal Energy Regulatory Commission calling on utilities to take various actions, including increased planning of large transmission projects. The U.S. Court of Appeals for the District of Columbia Circuit affirmed FERC's "Order 1000," a series of measures from 2011 that requires large-scale regional planning of the nation's electric grid designed in part to create greater access to renewable energy. The case addressed whether states could be forced to coordinate on transmission planning, carbon standards and paying for actions to create new transmission capacity. "The Commission reasonably determined that regional planning must include consideration of transmission needs driven by public policy requirements," the three-judge panel wrote in a 97-page unanimous ruling. Among those challenging FERC's July 2011 order were dozens of state regulatory agencies, public and private utilities, regional transmission organizations and electric industry trade associations. Opponents bristled at being forced to coordinate on transmission planning, arguing that Congress had "expressly" allowed such coordination among utilities to be voluntary. They also opposed the costs involved, which would be a departure from the usual process of passing costs onto consumers.

### **WESTERN POWER**

#### [Calif. Governor Signs \\$7.5B Plan To Tackle Drought](#)

[The Hill, Aug. 15] California Gov. Jerry Brown (D) signed a \$7.5 billion water plan to tackle the record-breaking drought, moving quickly to place it on the state's November ballot. Voters will be able to weigh in on whether the state should issue \$7.1 billion in new bonds, \$445 million of which is coming from prior debt sales. "Water is the lifeblood of any civilization and for California it's the precondition of healthy rivers, valleys, farms and a strong economy," Brown said in a statement,

according to [Bloomberg News](#). California is experiencing its third year of drought, hitting 80 percent of California. Brown said he had never witnessed Democrats and Republicans so united in his lifetime after the legislature sent the deal to his desk, [according](#) to The Associated Press.

#### [California Utility Pays \\$12 Million for Role in 2011 Blackout](#)

*The penalties paid by the Imperial Irrigation District are about four times what APS paid.*

[Arizona Republic, Aug. 13] A small California utility has agreed to pay \$12 million in penalties for its role in a September 2011 blackout that left much of Yuma, Southern California and northern Mexico in the dark for hours. The penalties for the Imperial Irrigation District are nearly four times the \$3.25 million Arizona Public Service Co. recently agreed to pay for its role in the event, which was triggered when a Yuma area APS employee missed a critical step while taking equipment offline for maintenance. APS officials said on the day of the blackout that the outage should have been contained because of protections built into the power grid and procedures designed to prevent outages from cascading. But those systems failed, partly because of poor communication among the utilities, according to the Federal Energy Regulatory Commission and North American Electric Reliability Corp. in a report on the event. The consequences of those failures was severe, particularly because it was a hot day. California beaches closed because millions of gallons of sewage to spilled into the ocean. Flights were grounded at Lindbergh Field, and San Diego schools, universities and community colleges remained shuttered the following day. Utilities missed multiple opportunities to contain the outage. Imperial Irrigation District could have mitigated the blackout by reducing the load on two transformers that tripped offline during the outage, but operators were not monitoring the situation, the FERC/NERC report said. Imperial Irrigation officials have long maintained they were not at fault for the incident.

#### [Emerging Solar Plants Scorch Birds in Mid-Air](#)

[Associated Press, Aug. 18] Ivanpah Dry Lake, CA — Workers at a state-of-the-art solar plant in the Mojave Desert have a name for birds that fly through the plant's concentrated sun rays — "streamers," for the smoke plume that comes from birds that ignite in midair. Federal wildlife investigators who visited the BrightSource Energy plant last year and watched as birds burned and fell, reporting an average of one "streamer" every two minutes, are urging California officials to halt the operator's application to build a still-bigger version. The investigators want the halt until the full extent of the deaths can be assessed. Estimates per year now range from a low of about a thousand by BrightSource to 28,000 by an expert for the Center for Biological Diversity environmental group. The deaths are "alarming. It's hard to say whether that's the location or the technology," said Garry George, renewable-energy director for the California chapter of the Audubon Society. "There needs to be some caution." The bird kills mark the latest instance in which the quest for clean energy sometimes has inadvertent environmental harm. Solar farms have been criticized for their impacts on desert tortoises, and wind farms have killed birds, including numerous raptors.

#### [Lyondellbasell CEO Leads Junior Achievement Effort To Tackle Houston's Energy Workforce Shortages](#)

[Houston Business Journal, Aug. 11] Houston-based [LyondellBasell Industries](#) (NYSE: LYB) CEO [Jim Gallogly](#) needs workers to help build and operate his chemical plants, but he also recognizes the needs throughout the Houston region for skilled workers in the energy, construction and health care sectors, and much more. Gallogly [wears a second hat as chairman of the Junior Achievement](#) of Southeast Texas Board, and JA is planning to bring more "Inspire" events to the Houston region to reach young people early on and to help connect eighth graders with career options. The Houston [region needs to fill almost 300,000 jobs in the next three years](#) in what is known as the "middle-skills" market — people who need additional training, but not necessarily university degrees — and the rush is on to find solutions.

#### [San Antonio Pursues Record Water Project amid Drought](#)

[Bloomberg, Aug. 13] San Antonio, the second-biggest city in Texas, is pursuing public negotiations with Abengoa (ABG) SA for a record \$3.3 billion, 142-mile (228-kilometer) aqueduct after its primary supply came under unprecedented rationing. A 30-year contract for 50,000 acre-feet of water annually at \$110 million a year may be signed next month with final approval by year-end, Greg Flores, a spokesman for the San Antonio Water System, said in a telephone interview. That would supply 162,000 more families so the city can grow, he said. The water level in the Edwards aquifer, which accounts for about 70 percent of San Antonio's supply, dropped so low that yesterday its manager for the first time cut pumping allocations by 40 percent. San Antonio kept its lawn-watering limit at 4 hours a week, saying an underground reservoir and other sources can meet demand during the state's drought. "The drought is not over," Carlos Rubenstein, chairman of the Texas Water Development Board, said at a public meeting yesterday. The state

will lose 1.1 million jobs at a cost of \$115 billion a year by 2060 without such projects, he said. Almost 800 Texas public water systems are rationing water, with some restrictions dating from the state's record drought that started in 2011, according to the Texas Commission on Environmental Quality. The U.S. Drought Monitor map for Texas released Aug. 7 showed about 36 percent of the state in the three most severe stages of drought.

#### [Southwest Braces as Lake Mead Water Levels Drop](#)

[ABC News, Aug. 12] LAS VEGAS — Once-teeming Lake Mead marinas are idle as a 14-year drought steadily drops water levels to historic lows. Officials from nearby Las Vegas are pushing conservation but also are drilling a new pipeline to keep drawing water from the lake. Hundreds of miles away, farmers who receive water from the lake behind Hoover Dam are preparing for the worst. The receding shoreline at one of the main reservoirs in the vast Colorado River water system is raising concerns about the future of a network serving a perennially parched region home to 40 million people and 4 million acres of farmland. Marina operators, water managers and farmers who for decades have chased every drop of water across the booming Southwest and part of Mexico are closely tracking the reservoir water level already at its lowest point since it was first filled in the 1930s. "We just hope for snow and rain up in Colorado, so it'll come our way," said marina operator Steve Biggs, referring to precipitation in the Rockies that flows down the Colorado River to help fill the reservoir separating Nevada and Arizona. By 2016, continued drought could trigger cuts in water deliveries to both states. While water authorities say they've been saving water for potential dry days, the prospect of the first cuts is already prompting action. "I've downsized in the last couple of years, probably a good thing the way this water shortage is going," said farmer Dennis Bagnall, who has planted just 225 of the 1,500 acres that are typically green this time of year on his farm south of Phoenix. Last week, officials announced an \$11 million pilot program involving the federal government and water agencies in Denver, Los Angeles, Las Vegas and Phoenix to pay farmers, cities and industries to reduce river water use.

### **ARIZONA STATE INCENTIVES/POLICIES**

#### **ARIZONA COMMERCE AUTHORITY (ACA)**

##### **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- [Job Training](#)
- [Quality Jobs](#)
- [Qualified Facility](#)
- [Computer Data Center Program](#)
- [Research & Development](#)
- [Foreign Trade Zone](#)
- [Military Reuse Zone](#)
- [Angel Investment](#)
- [Renewable Energy Tax Incentive](#)
- [Healthy Forest](#)
- [Sales Tax Exemption for Machinery and Equipment](#)
- [Lease Excise](#)
- [Additional Depreciation](#)
- [Work Opportunity](#)
- [Commercial/Industrial Solar](#)
- [SBIR/STTR](#)
- [Private Activity Bonds](#)
- [QECB's](#)

## (ACA) PROGRAMS

## DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#)

DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

## GRANTS

The following solicitations are now available:

*(Click on title to view solicitation)*

- [Tribal Energy and Mineral Development Grants](#) - Response due Aug. 25, 2014
- [Hydrogen Fuel Cell Technologies Incubator](#) - Response due Sep. 3, 2014
- [Manufacturing Machines and Equipment](#) - Response due Sep. 15, 2014
- [Secure and Trustworthy Cyberspace](#) - Response due Sep. 19, 2014
- [Nanomanufacturing](#) – Current Closing Date for Applications: Sep. 15, 2014  
Full Proposal Window: Sep. 1, 2014 – Sep. 15, 2014 Full Proposal Window: Feb. 01, 2015 – Feb. 17, 2015
- [Civil Infrastructure Systems](#) – Sep. 15, 2014 Submission Window Date(s) (due by 5 p.m. proposer's local time): Full Proposal Window: Sep. 01, 2014 – Sep. 15, 2014  
Full Proposal Window: Feb. 01, 2015 – Feb. 17, 2015
- [Frontier Observatory for Research in Geothermal Energy \(FORGE\)](#) – Close Date: Oct. 1, 2014
- [Vehicle Technologies Alternative Fuel Vehicle Deployment Initiatives](#) – Concept Paper Submission Deadline: Aug. 1, 2014 Submission Deadline: Oct. 1, 2014
- [Deployment of Clean Energy & Energy Efficiency on Indian Lands #DE-FOA-0001021](#) – Full Application Submission Deadline: October 2, 2014. A **Webinar** will be held on **August 14**. The intent of this webinar is to provide information for potential applicants to the Energy Departments Funding Opportunity for the Deployment of Clean Energy and Energy Efficiency on Indian Lands (DE-FOA-0001021). - Space is limited - Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/140937312>
- [Energy for Sustainability](#) – Current Closing Date for Applications: Nov. 5, 2014 Full Proposal Window: Oct. 01, 2014 – Nov. 5, 2014
- [Energy, Power, and Adaptive Systems](#) - Close Date: Nov. 3, 2014
- [National Robotics Initiative](#) - Response due Nov. 14, 2014
- [NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016](#) - Close Date: Dec. 11, 2014
- [Energy for Sustainability](#) – Current Closing Date for Applications: Nov. 5, 2014
- [Advanced Fossil Energy Projects](#) - Solicitation Number: DE-SOL-0006303 Expiration Date: Nov. 30, 2016
- [Repowering Assistance Program](#) - Ongoing
- [Rural Business Enterprise Grants](#) - Ongoing
- [Rural Business Opportunity Grants](#) - Ongoing
- [Sustainable Agriculture Research and Education Grants](#) - Ongoing
- [Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power](#) – Various Deadlines
- [U.S. Dept. of Agriculture - Rural Development Grant Assistance](#)
- [Green Refinance Plus](#) - Ongoing










## ENERGY-RELATED EVENTS

### 2014

-  [SBIR: Ask the Experts](#)  
August 20 Tucson, AZ
-  [SBIR: Ask the Experts](#)  
August 21 Phoenix, AZ
-  [2014 ACEEE Summer Study on Energy Efficiency in Buildings](#)  
August 17-22 Pacific Grove, CA
-  [2014 Farm Progress Show](#)  
August 26-28 Boone, IA
-  [Symposium on Thermal & Catalytic Sciences for Biofuels & Biobased Products](#)  
September 2-5 Denver, CO
-  [EPI's 4<sup>th</sup> Annual Energy Policy Research Conference](#)  
September 4-5, 2014 San Francisco, CA
-  [Economic Outlook 2015](#)  
September 5 Phoenix, Arizona
-  [NEW! Native Learning Centers Indian Housing Training Conference](#)  
September 10-14 Tulsa, OK
-  [Arizona Technology Summit](#)  
September 17 Phoenix, AZ
-  [HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles](#)  
September 22-24 Argonne, National Lab - Argonne, IL
-  [World Energy Engineering Congress](#)  
October 1-3 Washington, DC
-  [Geothermal Energy Expo](#)  
September 28-October 1 Portland, OR
-  [NEW! SRP 2015 Economic Forecast](#)  
October 2 Phoenix, AZ
-  [AWEA Offshore Windpower Conference & Exhibition 2014](#)  
October 7-8 Atlantic City, NJ
-  [NEW! Ute Tribe Energy Conference & Expo](#)  
October 14-15 Denver, CO
-  [NEW! National Alternative Fuel Vehicle \(AFV\) Day Odyssey](#)  
October 17, 2014
-  [Solar Power International](#)  
October 20-23 Las Vegas, NV
-  [GreenBuild International Conference & Expo](#)  
October 22-24 New Orleans, LA
-  [World Bio Markets USA](#)  
October 27-29 San Diego, CA
-  [VERGE SF 2014](#)  
October 27-30.. San Francisco, CA

-  [Governor's Celebration of Innovation](#)  
November 13    Phoenix, AZ
-  [ACEEE Intelligent Efficiency Conference](#)  
November 16-18..    San Francisco, CA
-  [Renewable Energy Markets Conference](#)  
December 2-4    Sacramento, CA

## **2015**

-  [Solar Power Generation USA 2015](#)  
February 4-5, 2015    San Diego, CA
-  [NEW! GreenBiz Forum 2015](#)  
February 17-19, 2015    Phoenix, AZ
-  [NEW! 2015 Sustainability Solution Festival](#)  
February 17-22, 2015    Phoenix, AZ
-  [NEW! Solar Power Generation Mexico](#)  
May 19-20, 2014    World Trade Center, Mexico
-  [Green Building Lecture Series](#)  
Granite Reef Senior Center    Scottsdale, AZ
-  [ASU Sustainability Series Events](#)
-  [Green Building Lecture Series](#)    Scottsdale, AZ
-  [ENERGY STAR Webinars](#)
-  [U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014](#)